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COVER LETTER

**The Relationships Among the Factors of Satisfaction and Anticipated Turnover of
Air Force Certified Registered Nurse Anesthetists**

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**The Relationships Among the Factors of Satisfaction and Anticipated Turnover of
Air Force Certified Registered Nurse Anesthetists**

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ABSTRACT

A high turnover rate of United States Air Force (USAF) Certified Registered Nurse Anesthetist (CRNA) creates both financial and morale issues for the Air Force. The purpose of this exploratory study was to identify the relationships among factors of satisfaction and anticipated turnover of USAF CRNAs. A web-based survey was used for data collection, and all active duty Air Force CRNAs were invited to participate. Significant negative relationships were found between three sets of factors: status accorded and job related factors ($r=-.333$); practice issues and status accorded ($r=-.250$); professional/occupational job satisfaction and anticipated turnover ($r=-.251$). In general, active duty Air Force CRNAs experience low levels of satisfaction and anticipate separating from the Air Force before retirement. Those who feel they deliver quality care, have adequate time to deliver that care to patients, as well as enjoy their positions are less likely to anticipate separating from the Air Force before retirement.

BACKGROUND AND PURPOSE

The US Air Force (AF) provides anesthesia services to active duty members, their dependents, retirees, and other beneficiaries as well as providing anesthesia personnel in support of military and humanitarian missions throughout the world. The AF has historically experienced fluctuations in anesthesia manpower. Currently, only 81% of the available Certified Nurse Anesthetists (CRNAs) positions in the AF are filled, with no projected change for the upcoming year. The 2001 TriService Working Group (TSWG), consisting of anesthesia representatives from the Air Force, Army and Navy, was formed to identify reasons military CRNAs separated from the service. They also asked current AF CRNAs, through a mailed survey, when they intended to separate from active duty. More than half of the respondents indicated that they planned to separate (34.4%) or were undecided about separating (20.9%) between 2002 and 2004. Between 1994 and 1998, losses of AF CRNAs exceeded gains by six CRNAs each year. The nationwide demand for CRNAs has fueled rising civilian wages and a widening gap between civilian and military pay. The shortage of CRNAs across the United States is expected to reach 15,000 by 2010.¹ High turnover of nurse anesthetists creates a financial burden on the USAF. Recruiting civilian CRNAs has been virtually impossible since 1990. The vast majority of new AF CRNAs come from training active duty critical care nurses. This method of supplying CRNAs for the AF is expensive. The costs include full salary and benefits for the student nurse anesthetist for two and a half years, books, tuition, and the cost of three permanent change of station moves for each student. Another significant cost includes filling the critical care positions vacated by the nurses selected for anesthesia training. Understanding the issues related to CRNA satisfaction is important in order to implement

actions aimed at reducing the number of anesthetists who leave before reaching retirement eligibility and improving overall manpower availability.

The purpose of this study was to: (a) identify the relationships among the factors of satisfaction and anticipated turnover of Air Force CRNAs in order to enhance the understanding of retention issues; (b) augment the findings on job satisfaction of Air Force CRNAs provided by the Tri-Service Working Group in 2001; (c) compare current results with earlier study findings.

This exploratory study was based on a four-stage model of factors that influence Air Force CRNA job satisfaction and anticipated turnover. The model was adapted (Cowan, J. A. 1995), The relationship between Navy anesthesia providers' job satisfaction and anticipated turnover. Unpublished master's thesis, Arizona State University) from the five-stage theoretical model of anticipated turnover among nursing staff developed by Hinshaw and colleagues.² In this multistage model, factors from lower stages are predicted to influence factors in the next higher stage. The influence of factors from stage to stage culminates in a level of anticipated turnover in Stage IV.

Stage I: Initial expectation of service and mobility factors are the components of Stage I. Employees who, when first hired, plan to remain with an organization until eligible for retirement are less likely to report anticipated turnover.³ A significant relationship ($r=.370, \leq .01$) has been found between Air Force CRNAs who, when they first joined the Air Force, planned to stay until retirement and those who stated, at the time of the survey, that they still anticipate retiring from the Air Force (Stamps, D. J. (1997), The relationships between Air Force anesthesia provider's job satisfaction and anticipated turnover, Unpublished master's thesis, Uniformed Services University of the Health Sciences, Bethesda, MD). Similar findings also support the relationship between initial

expectation of service and anticipated retirement for United States Army CRNAs ($r=.225$, $p\leq .01$) (Grasso, D. P. (1998), The Relationship between Army CRNA Job Satisfaction and Turnover, Unpublished masters thesis, Uniformed Services University of the Health Sciences, Bethesda, MD). For the purpose of the present study, initial expectation of service is defined as the anticipation at the time of initial employment as an Air Force CRNA, to remain until retirement. The initial expectation of service is predicted to negatively influence anticipated turnover directly as well as influence Stage II factors.

Mobility factors are demographic factors of AF CRNAs that are expected to influence turnover. The two mobility factors considered for the present study are number of dependents and length of military service. As family obligations increase and time toward retirement accrues within an organization, a nurse is considered less mobile which is expected to negatively influence anticipated turnover as well as influence Stage II factors.²

Stage II: Status accorded, job related factors, interpersonal relations and practice issues are the primary components of Stage II. Status accorded includes both professional status and social status. Professional status is the perceived position one holds in the organizational hierarchy with respect to other healthcare professionals. It is indicated by pay and rewards such as promotion. Social status is how much one perceives society values his or her accomplishments and position. Status accorded is predicted to positively influence organizational work satisfaction and professional/occupational job satisfaction. Increased status accorded has been shown to reduce anticipated turnover.² The TSWG, through a telephone interview with recently separated CRNA's, identified inadequate pay and poor promotion opportunities as the two top reasons Air Force CRNA's identified for separating from the Air Force.

The job related factors include work itself, enjoyment, knowledge and skills, and competence. Work itself includes the routine administrative tasks as well as the actual administration of anesthesia. Excessive administrative tasks can negatively influence professional/occupational job satisfaction. The TriService Working Group found additional administrative duties to be one of the top reasons for Air Force CRNAs to separate from the service. Enjoyment is the overall level of happiness one receives from work related tasks. Knowledge and skills are the possession of a broad base of professional knowledge and experience in the delivery of anesthesia care. Competence is the ability to deliver appropriate anesthesia care. Job related factors influence how well CRNAs feel they can do their jobs as well as how much they enjoy their job. These factors are predicted to influence professional/occupational job satisfaction.

Interpersonal relations include group cohesion, team support, and team respect. Group cohesion is the level of unity in which the anesthesia care team performs. Team support is how well the team encourages and helps individual members provide quality anesthesia care, and team respect is how much members feel their contributions are valued by the team. Interpersonal relations are predicted to have a positive influence on Stage III.

Practice issues include the physical environment, autonomy, control over practice, collaboration, and research. The physical environment includes safety of the work area to include noise levels. It also includes the availability of necessary equipment and supplies to perform necessary work tasks. Autonomy is the authority to select an anesthesia plan of care and make other appropriate professional decisions. Control over practice is the influence a CRNA will have in effecting practice and administrative changes.

Collaboration is the cooperative working relationship between the anesthesia team, CRNA and anesthesiologist. Research refers to the level in which research is performed, or the

level in which research results are utilized by the anesthesia team. Practice issues are predicted to influence Stage III factors.

Stage III: Organizational work satisfaction and professional/occupational job satisfaction are components of stage III. Organizational work satisfaction is defined as the Air Force CRNA's perception of the job in terms of pay or reward, administration style, professional status accorded, and interaction with colleagues.⁴

Professional/occupational job satisfaction was defined as the anesthesia staff's opinion of the quality of the care they delivered, time to conduct their care activities, and general enjoyment of their position.⁵ Both types of satisfaction are predicted to negatively influence anticipated turnover.

Stage IV: The only factor included in stage IV is anticipated turnover. It is the degree to which an Air Force CRNA perceives that he or she will separate from the AF before becoming eligible for retirement. Any active duty service commitment must be completed before the CRNA may either retire or separate from the AF, meaning they may wish to separate but are unable to do so at the present time. Anticipated turnover has been shown to correlate to actual turnover in nursing personnel.⁶ The relationships among factors affecting job satisfaction are complex and do not always flow linearly from one stage to the next. For instance, the initial expectation of service and mobility factors in Stage I are predicted to negatively influence anticipated turnover directly as well as influence Stage II factors.²

METHOD

Sample

At the time of survey distribution, the USAF employed 168 active duty CRNA authorized positions with 137 of those positions filled. All active duty AF CRNAs (N = 137) were eligible to participate in the study. Individual Mobility Augmentees and reservists currently on active duty, civilian contractors or any Department of Defense employees were not included in the study. Active duty CRNAs with deliverable duty e-mail addresses was invited to participate (n=116, 84%). The initial invitation to participate was sent via email and included a hyperlink to the survey. A reminder email was sent two week that resulted in an overall response rate of 66% (n=77).

Instrument

The instrument consists of a two-part questionnaire: a 15-question demographic section and a 36- Likert-style question section. Each Likert-style question relates to one of the factors from the theoretical model. The present questionnaire was derived from Cowan's adaptation of the Nurse Job Satisfaction Scale, the Work Satisfaction Scale and the Anticipated Turnover Scale. She performed a pretest for her adaptation of the instrument, and using multicollinearity factor analysis reduced the number of questions from 65 to 57. The data from her study was computed using verimax rotational technique confirmatory factor analysis. The number of questions was reduced further to 37 due to eliminating all questions with factor loadings of less than 0 .5. Cronbach's alpha for reliability resulted in the following: anticipated turnover .70, initial expectations of service .60; interpersonal relationships .88; job related factors .76; organizational/work satisfaction .65; practice issues .67; professional/occupational job satisfaction .81; status accorded .55.

Survey questions for the present instrument were reworded slightly from Cowan's adaptation to apply specifically to Air Force nurse anesthesia providers.

RESULTS

This exploratory study utilized a web-based survey and Spearman's rank order correlation coefficient to examine the relationships among each of the following factors: 1) mobility factors, 2) initial expectation, 3) job related factors, 4) interpersonal relationships, 5) practice issues, 6) status accorded, 7) professional/occupational job satisfaction, 8) organizational/work satisfaction, and 9) anticipated turnover of Air Force CRNAs.

Significant negative relationships were found between three sets of factors: status accorded (pay and rewards) and job related factors (work itself, knowledge, competence and enjoyment) ($r^2=.11$); practice issues (environment, autonomy, control over practice and collaboration) and status accorded ($r^2=.062$); (quality of care delivered and enjoyment of position) and anticipated turnover (separating from active duty before retirement) ($r^2=.063$).

Results of demographic survey questions from the mobility factor included 53% male, 43% female with three not responding to the question. The majority of responders, 58%, have between 15 and 20 years of active duty service. 57% of our sample had two or more dependents currently living with them.

CONCLUSION

The four-stage theoretical model used for this study predicts that factors from lower stages will influence factors of the next higher stage. Our findings are in support of this model. Professional/occupational job satisfaction, a stage III factor, was found to have a negative correlation to anticipated turnover, the stage IV factor. In general, most USAF CRNAs have a low sense of professional/occupational job satisfaction and organizational/work satisfaction. They also anticipate separating from the Air Force before retirement. Interestingly, all mean factor scores of subjects with an active duty service commitment were virtually identical to the mean factor scores of subjects without an active duty service commitment. Active duty Air Force CRNAs who feel they deliver quality care, have adequate time to deliver that care to patients, as well as enjoy their positions are less likely to separate from the Air Force before retirement. These findings support the findings of Stamps who studied Air Force CRNAs and Cowan who studied Navy anesthesia providers. Further research into satisfaction factors may lead to decisions improving manning and morale through a decrease in anticipated turnover and increased job satisfaction.

Disclaimer

The views expressed in this material are those of the authors, and do not reflect the official policy or position of the U.S. Government, the Department of Defense, or the Department of the Air Force. The voluntary, fully informed consent of the subjects in this research was obtained as required by 32 CFR 219 and AFI 40-402. This research was conducted under Clinical Investigation No.HSC-SN-03-018 through University of Texas, Houston Health Science Center.

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